ABSTRACT OF THE DISCLOSURE

ENQUEUING APPARATUS FOR ASYNCHRONOUS TRANSFER MODE (ATM) VIRTUAL CIRCUIT MERGING

A system and method for merging multiple connections that share a same class of service into a single virtual circuit (VC) connecting a first switching node to a second switching node in an Asynchronous Transfer Mode (ATM) network. In accordance with the system of the present invention, a data buffer stores cells that constitute a packet received by a switching node. A queuing apparatus includes multiple connection queues associated respectively with each of the connections, and further includes a scheduled queue corresponding to a particular class of service, wherein contents of the connection queues are transferred into the scheduled queue before being transmitted on the VC. A reassembly queue control block (RQCB) is associated with each of the connection queues, and defines a chain of buffer control blocks. Each buffer control block corresponds to a cell belonging to a packet transmitted in a particular connection. Each buffer control block also includes a next buffer address in the data buffer and a lock bit that is normally set to 1 for an incoming cell and is set to 0 for an incoming cell only if the incoming cell is a last cell of the packet. A scheduled queue control block (SQCB) is associated with the scheduled queue to which the chain of buffer control blocks is transferred in response to a determination that the lock bit of a cell stored within the data buffer is set to 0. A corresponding buffer control block is chained to the chain of buffer control blocks in the SQCB without having been previously queued in the RQCB.